

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

EP 0 695 515 A2

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
07.02.1996 Bulletin 1996/06

(51) Int. Cl.<sup>6</sup>: A43B 23/26, A43B 5/04

(21) Application number: 95202029.5

(22) Date of filing: 22.07.1995

(84) Designated Contracting States:  
AT CH DE FR IT LI

(30) Priority: 04.08.1994 IT TV940048

(71) Applicant: TECNICA SpA  
I-31040 Gaiava del Montello (Treviso) (IT)

(72) Inventors:

- Gabrielli, Andrea  
I-38037 Predazzo (Trento) (IT)
- Marega, Antonello  
31040 Volpago (Treviso) (IT)

(74) Representative: Michelotti, Giuliano et al  
I-31100 Treviso (IT)

**(54) Tongue for internal shoes of ski-boots**

(57) A padding (14), which is covered internally with a lining (18) and externally with a rigid layer (16), is provided in a tongue for the internal shoes of ski boots. The padding (14) is divided into a lower portion (14a) which is integral with the rigid layer (16) and an upper portion (14b) which is integral with a sliding insert (20) interposed between the upper portion itself and the rigid external layer (16). The position of the sliding insert (20) and thus of the upper padding (14b) varies between a lower limit position in which the sliding insert (20) is completely lowered and an upper limit position in which the sliding insert (16) is completely raised.

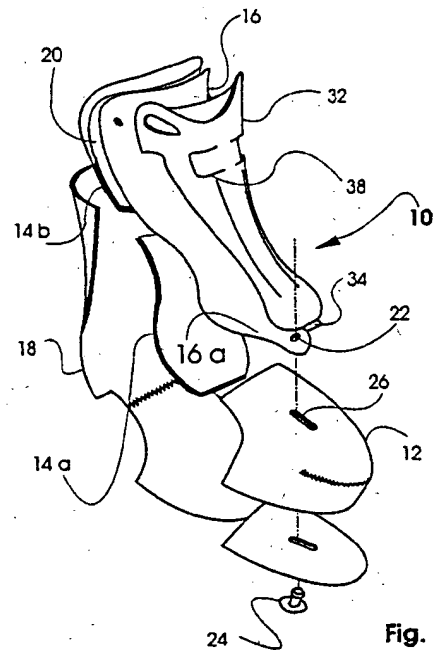


Fig. 1

EP 0 695 515 A2

## Description

The present invention relates to a tongue for the internal shoes of ski boots.

The internal shoes of ski boots generally have a longitudinal front opening defining two limbs, which thus facilitates the introduction of the foot into the shoe. The internal shoes are also provided with a tongue for closing the longitudinal opening. In particular, reference may be made to the internal shoe depicted in the patent application No. TV93A 000112 filed on 7th December 1993 in the name of the same Applicant, in which the tongue is connected to the shoe by means having slots and pins which enable it to move longitudinally, and thus to float. The use of floating tongues has contributed to the achievement of various results; however, it has been observed that skiers, who are ever more demanding, require other possibilities and adjustments from a ski boot.

Skiers first of all wish to be able to adjust the rigidity or flexibility of the boot in the longitudinal plane and also to be able to vary the extent to which the shoe surrounds their leg. Every skier requires a particular ski boot adjustment which depends not only on subjective factors, for example, some skiers prefer to ski with a ski boot which is fairly rigid and surrounds the leg in a satisfactory manner, but also on objective factors, for example the type of descent (free descent, slalom, etc.) and the height and weight of the skier. In addition, in the case of special skiing activities, such as snow-boarding, because the position of the boots is asymmetrical, each boot requires a different adjustment. The object of the present invention is thus to produce a tongue for ski boots which enables the above-mentioned nowadays requirements and possibilities demanded by skiers to be satisfied and provided simply and economically.

A further object of the invention is to reduce the pressure exerted by the tongue on the front part of the leg when the boot is locked by the closing levers, thus increasing the skier's comfort.

These objects are achieved by means of a tongue of the type comprising a padded intermediate layer of padding, a covering internal layer or lining and a rigid external layer, characterized in that the padding is divided into a lower portion which is integral with the rigid external layer and an upper portion which is integral with an insert which slides longitudinally and is interposed between the padding portion itself and the rigid external layer, the said lining being stretchable resiliently, thus defining, for the sliding insert and the upper padding portion which is integral therewith, a lower limit position in which the sliding insert is completely lowered and the two padding portions are adjacent to each other and an upper limit position in which the sliding insert is completely raised and the two padding portions are at a distance from each other and the lining is stretched resiliently.

Thus, if the skier wishes to have a shoe which surrounds his leg satisfactorily, he raises the sliding insert,

and if, on the other hand, he requires a shoe which surrounds his leg to a lesser extent, he lowers the sliding insert completely.

Furthermore, by raising the sliding insert, the tightening force exerted by the boot locking means is distributed over a larger surface area, thus reducing the pressure on the leg and consequently increasing the skier's comfort.

According to a preferred embodiment of the invention, the sliding insert may assume intermediate positions, thus permitting a more sensitive adjustment.

In a particular embodiment, the facing edges of the two padding portions have complementary "comb profiles", so that, in the lower limit position, that is to say, with the sliding insert and thus the upper padding portion completely lowered, the two "comb profiles" mate and, in the upper limit position, that is to say, with the sliding insert and thus the padding completely raised, the ends of the "comb profiles" interengage in alternation.

Thus, if the sliding insert is completely raised, there is no sudden interruption in the padding and thus the wearer's comfort remains unchanged.

In another application of the invention, a reinforcing member is applied to the rigid external layer. It is thus possible to vary the flexibility of the boot in the longitudinal plane simply by altering the thickness of the reinforcing member or the material of which it is made.

These and other features and advantages of the invention will be better appreciated from the following detailed description of an embodiment thereof which is given by way of non-limiting example with reference to the following drawings in which:

- figure 1 is an exploded perspective view of an assembly comprising the tongue and toe of a shoe according to the invention;
- figure 2 is a partial longitudinal section through the tongue of figure 1;
- figure 3 is a front view of the sliding insert used in the said tongue;
- figures 4, 5 and 6 are side views of the tongue of figure 1 in which the upper padding portion is shown in three different positions;
- figures 7 and 8 are, respectively, side views of the reinforcing member and the tongue without the said member.

Figures 1 and 2 show a tongue 10 connected to a toe 12 of an internal shoe for ski boots.

The tongue 10 comprises a padded intermediate layer or padding divided into a lower portion 14a and an upper portion 14b, a rigid external layer 16 and an internal covering layer or lining 18; the lining 18 also covers the internal portion of the toe 12. The lower padding portion 14a is rigidly secured to the rigid external layer 16, for example, by means of an adhesive, whilst the upper padding portion 14b is secured to an insert 20 interposed between it and the rigid external layer 16.

It can be seen from figures 2 and 3 that the upper portion of the insert 20 is of a shape corresponding to that of the upper padding portion 14b.

The upper padding portion 14b is secured to the sliding insert 20, for example, by means of an adhesive.

Both the lower portion 14a and the upper padding portion 14b are covered at the underside by the lining 18, the edge of which is stitched to the edge of the upper portion of the sliding insert 20 and to the edge of the lower portion of the rigid external layer 16.

The rigid external layer 16 has, at its lower end 16a, a hole 22 in which a pin is secured to slide in a longitudinal slot 26 in the toe 12 of the shoe.

The tongue 10 is therefore able to slide longitudinally with respect to the shoe. As already stated, this connection also forms part of the subject-matter of the above-mentioned patent application.

Figures 2 and 3 show that the sliding insert 20 has, in its upper portion, two longitudinal slots 28, 30 in each of which slides a respective pin 31 which is secured in the rigid external layer 16. The longitudinal slots 28, 30 are provided with two widened opposing ends 28a, 28b and 30a, 30b and also an intermediate widened portion 28c, 30c constituting seats for accommodating the pins 31.

Consequently, the insert 20 and thus the upper padding portion 14b can slide longitudinally between two limit positions: a lower limit position (see figure 4) in which the insert 20 is completely lowered and thus the pins 31 abut the ends 28a, 30a of the respective slots 28, 30 and an upper limit position (see figure 6) in which the insert 20 is completely raised and the pins 31 abut the ends 28b, 30b (see figure 2). The insert 20 can also assume an intermediate position shown in figure 5 in which the pins 31 are accommodated in the widened portion 28c, 30c of the respective slots 28, 30.

If the skier wishes to change the position of the insert 20 and therefore of the upper padding portion 14b, he simply grips the upper end of the insert 20 which slides outwards or inwards with respect to the tongue 10, depending on the direction in which the force is applied.

Of course, in order to enable the insert 20 to move, the lining is produced from a resilient material so that it can stretch when the insert 20 is moved out to the desired extent as a result of the sliding of the tongue 10.

Figures 1 and 7 show a reinforcing member 32 which has a shape similar to that of the rigid external layer 16 but with slightly smaller dimensions and which can be applied to the external surface of the said layer. The reinforcing member 32 is provided at its lower end with a tab 34 which can be fitted into a slot 36 in the lower portion of the rigid external layer 16 (see figure 8). The upper portion of the reinforcing member 32 is provided with two fins 38, 40 which can be inserted into corresponding slots 42 in the upper portion of the rigid external layer 16 (see figure 8).

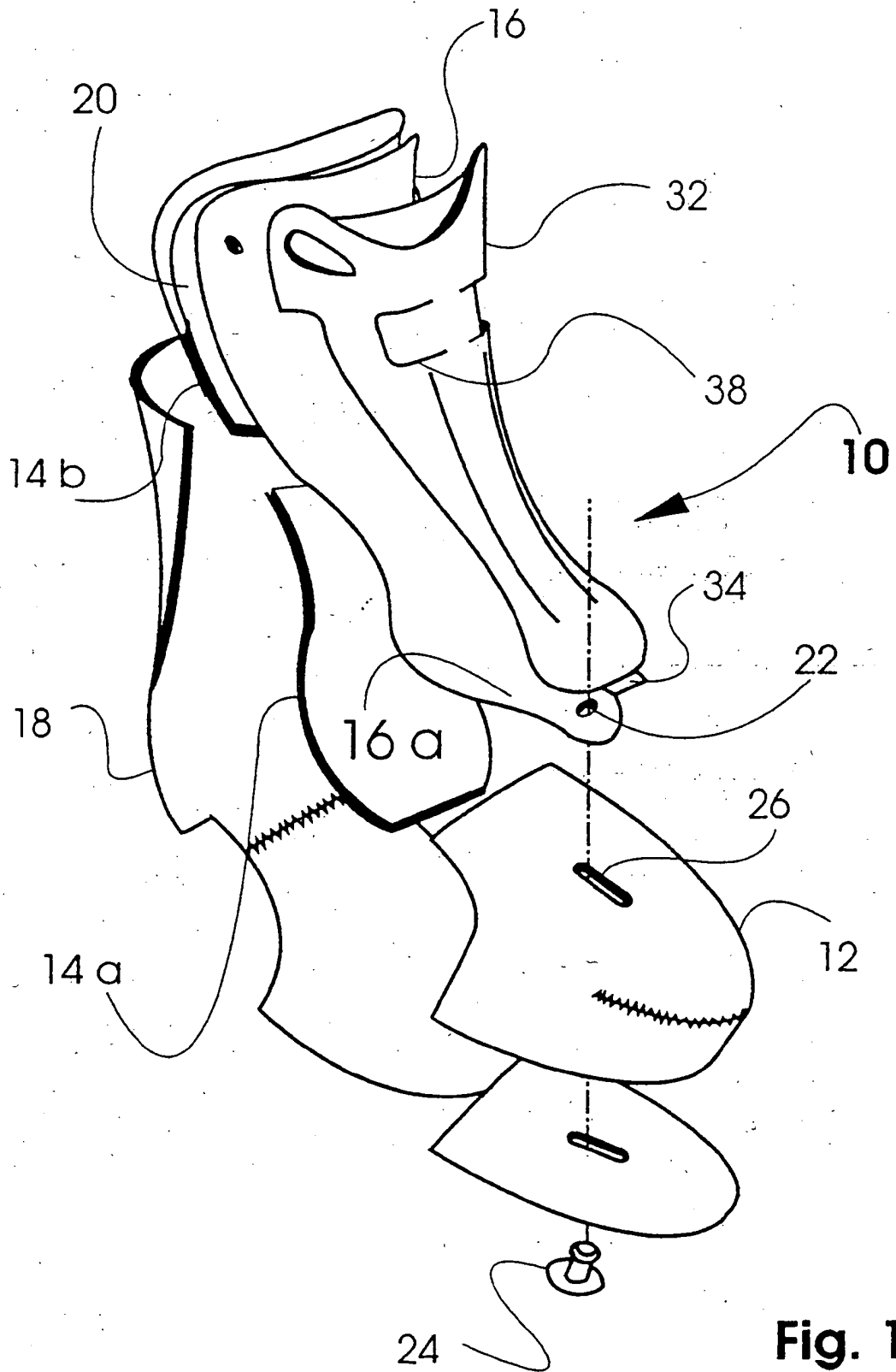
By suitably changing the thickness or the type of material of the reinforcing member 32, the flexibility of the tongue and therefore of the boot can be changed in the longitudinal plane. In the extreme state of there being

no reinforcing member 32, the rigidity value will of course be the minimum the possible. At last, it is clear that modifications or variants of equivalent design or function fall within the coverage of the present invention. For example, in a situation where the insert is completely raised, that is to say, extracted from the tongue, in order to prevent the skier noticing the lack of padding in the separating area between the upper padding portion and the lower portion, it is possible to provide the facing edges of the two portions with a complementary "comb portion". In the position in which the insert is completely raised, a reciprocal engagement, however minimal, should preferably take place between the two profiles so that the padding is present along the entire longitudinal profile of the tongue.

### Claims

1. Tongue for the internal shoes of ski boots, of the type comprising a padded intermediate layer or padding (14), a covering internal layer or lining (18) and a rigid external layer (16), characterized in that the padding (14) is divided into a lower portion (14a) which is integral with the rigid external layer (16) and an upper portion (14b) which is integral with an insert (20) which slides longitudinally and is interposed between the padding portion itself (14b) and the rigid external layer (16), the said lining (18) being stretchable resiliently, thus defining, for the sliding insert (20) and the upper padding portion (14b) which is integral therewith, a lower limit position, in which the sliding insert (20) is completely lowered and the two padding portions (14a, 14b) are each other adjacent and an upper limit position in which the sliding insert (20) is completely raised and the two padding portions (14a, 14b) are at a distance from each other and the lining (18) is stretched resiliently.
2. Tongue according to claim 1, characterized in that the sliding insert (20) or rigid external layer (16) is provided with one or more longitudinal slots (28, 30) in which slides a pin (31) secured to the other of the sliding insert (20) or rigid external layer (16).
3. Tongue according to claim 2, characterized in that the said at least one slot (28, 30) is arranged on the sliding insert (20) and the said at least one pin (31) is secured to the rigid external layer (16).
4. Tongue according to claim 2 or 3, characterized in that there are two slots (28, 30) and two respective pins (31).
5. Tongue according to any one of claims 2 to 4, characterized in that each slot (28, 30) has, at both of its ends (28a, 18b and 30a, 30b), a widened portion which can determine the two limit positions of the sliding insert (20).

6. Tongue according to claim 5, characterized in that each slot (28, 30) has at least one widened portion (28c, 30c), in an intermediate position, each of which is able to define for the sliding insert (20) a position intermediate between the two limit positions. 5
7. Tongue according to any one of the preceding claims, characterized in that the lining (18) has at least one transverse strip produced from resilient material. 10
8. Tongue according to any one of claims 1 to 6, characterized in that the lining (18) is produced from resilient material. 15
9. Tongue according to any one of the preceding claims, characterized in that the facing edges of the two padding portions (14a, 14b) have complementary "comb profiles" so that, in the lower limit position, that is to say, with the sliding insert (20) and thus the upper padding portion (14b) completely lowered, the two "comb profiles" mate and, in the upper limit position, that is to say, with the sliding insert (20) and thus the padding (14b) completely raised, the ends of the "comb profiles" interengage in alternation. 20 25
10. Tongue according to any one of the preceding claims, characterized in that a reinforcing member (32) is applied to the rigid external layer (16). 30
11. Tongue according to claim 10, characterized in that the reinforcing member (32) is elongate and its lower and upper ends engage with the upper and lower ends, respectively, of the rigid external layer (16). 35
12. Tongue according to claim 11, characterized in that the reinforcing member (32) has, at its lower end, a tab (34) which can engage in a slot (36) in the lower portion of the rigid external layer (16) and, in its upper portion, has two fins (38, 40) which can engage in corresponding slots (42) in the rigid external layer (16). 40 45 50 55



**Fig. 1**

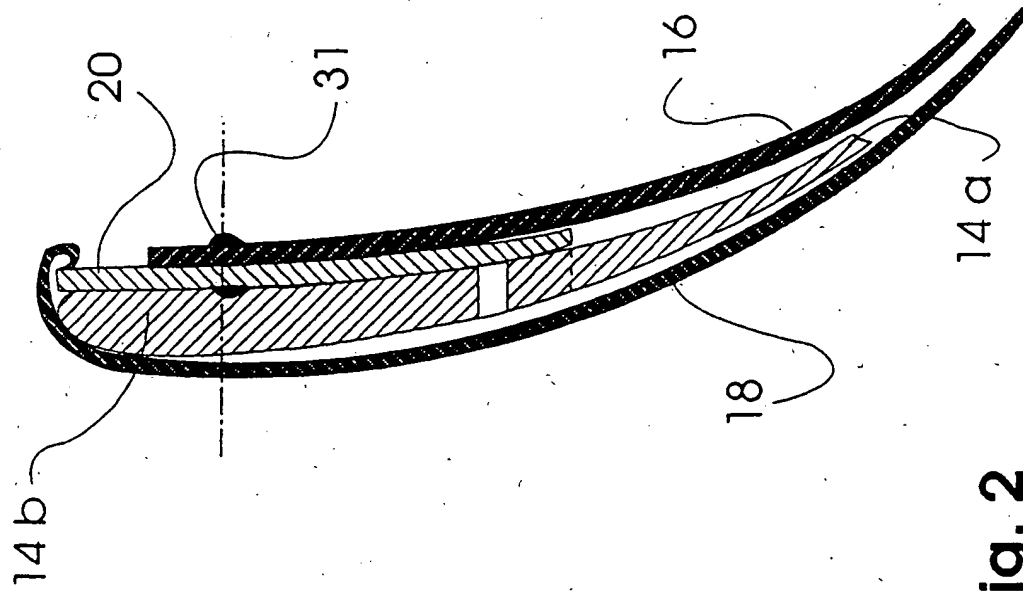


Fig. 2

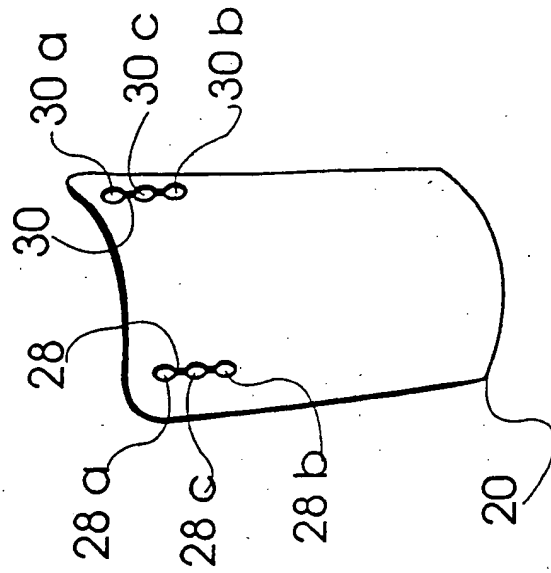


Fig. 3

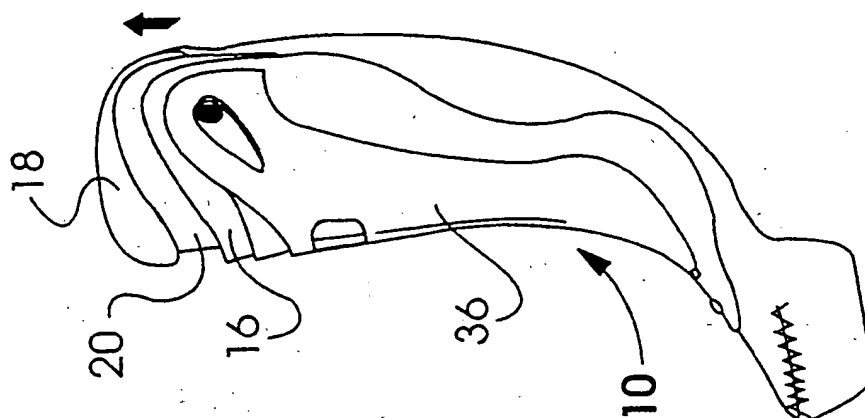


Fig. 6

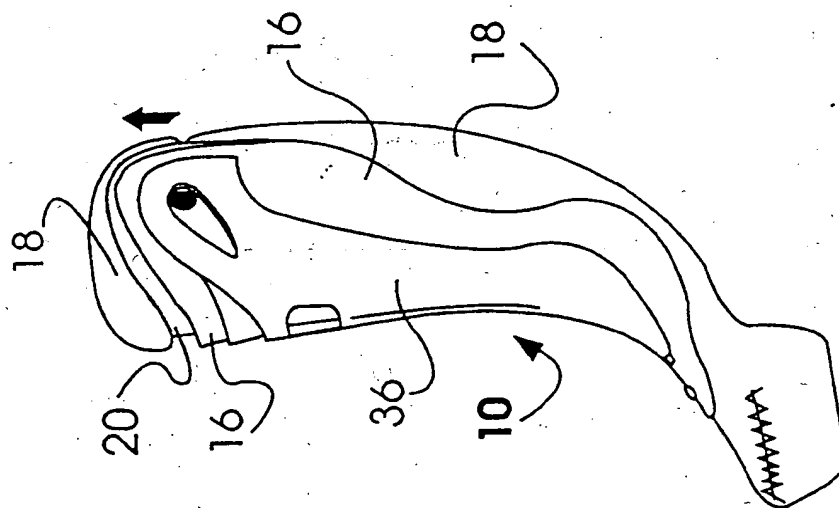


Fig. 5

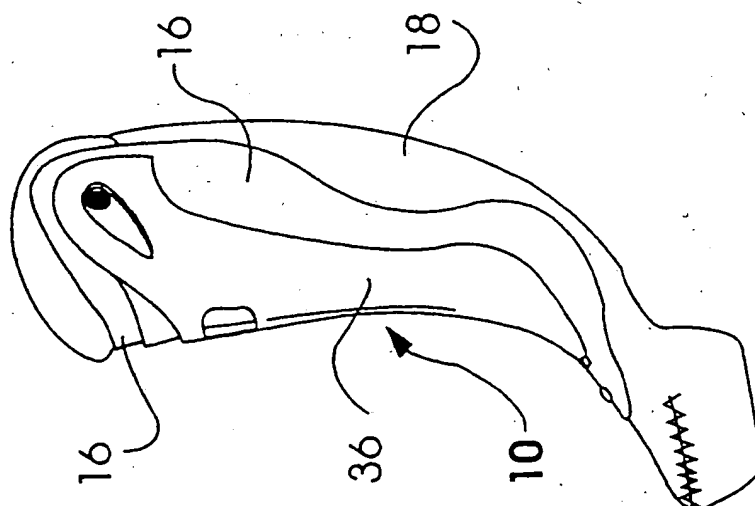
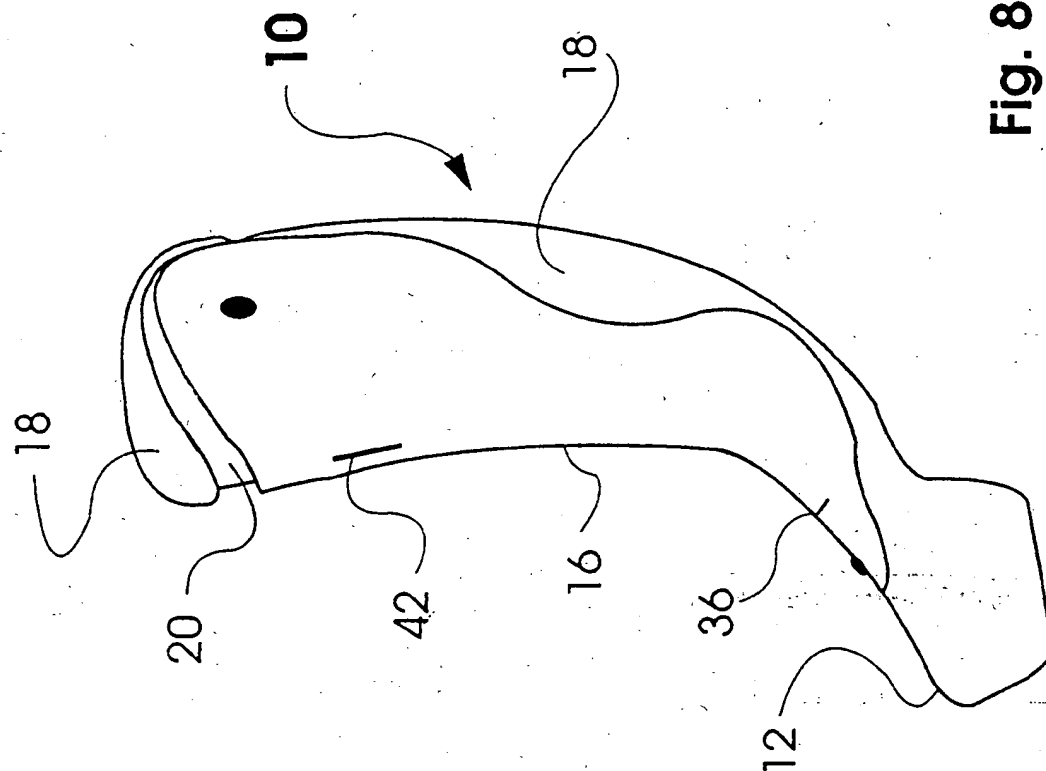
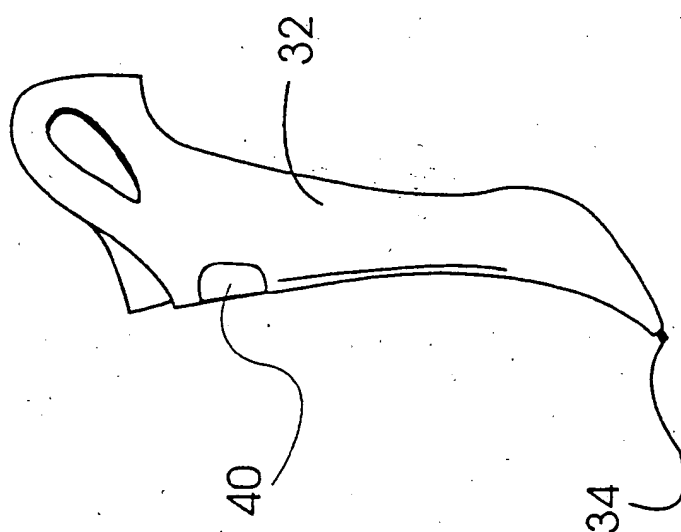


Fig. 4

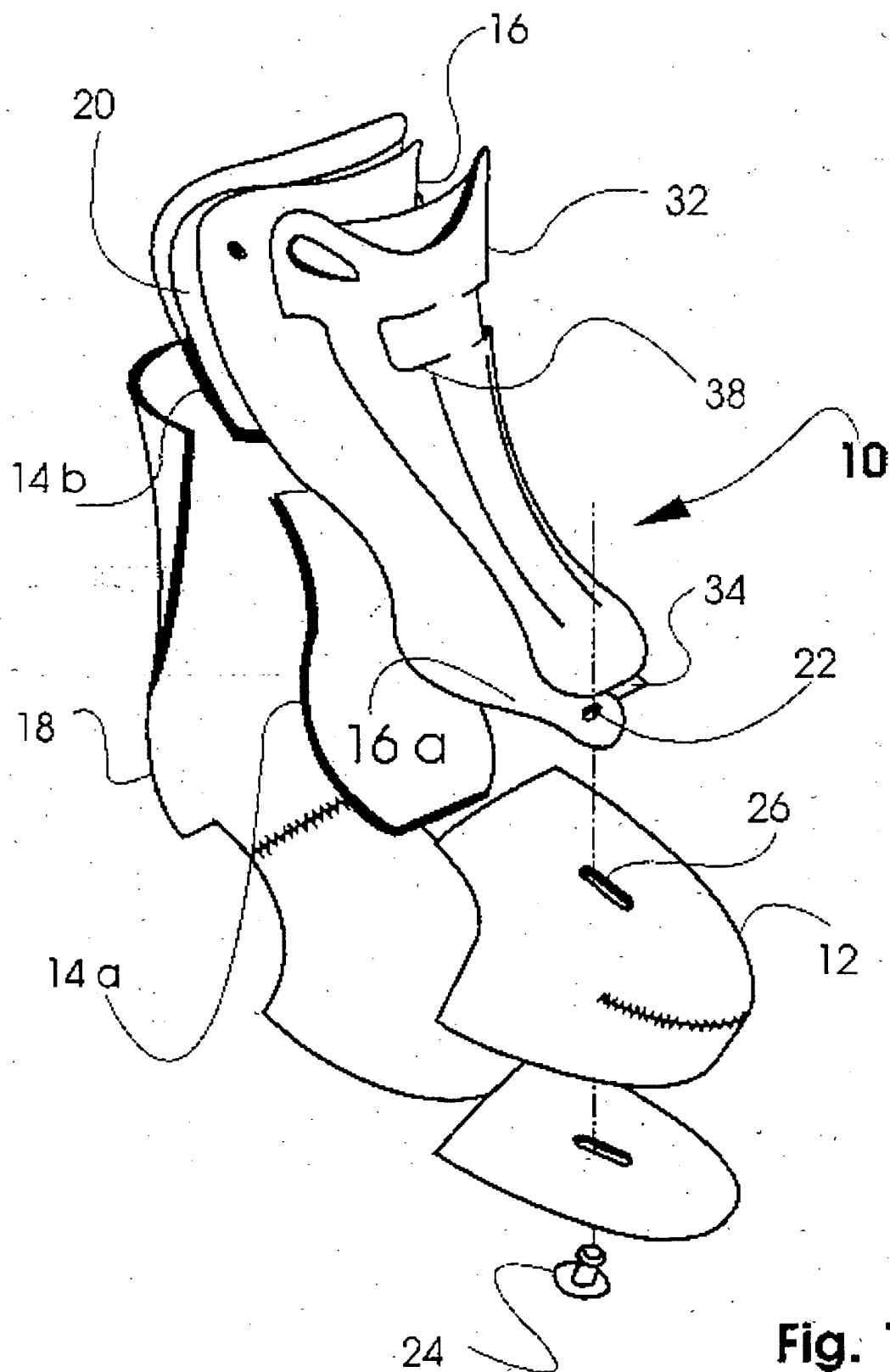


**Fig. 8**



**Fig. 7**





**Fig. 1**

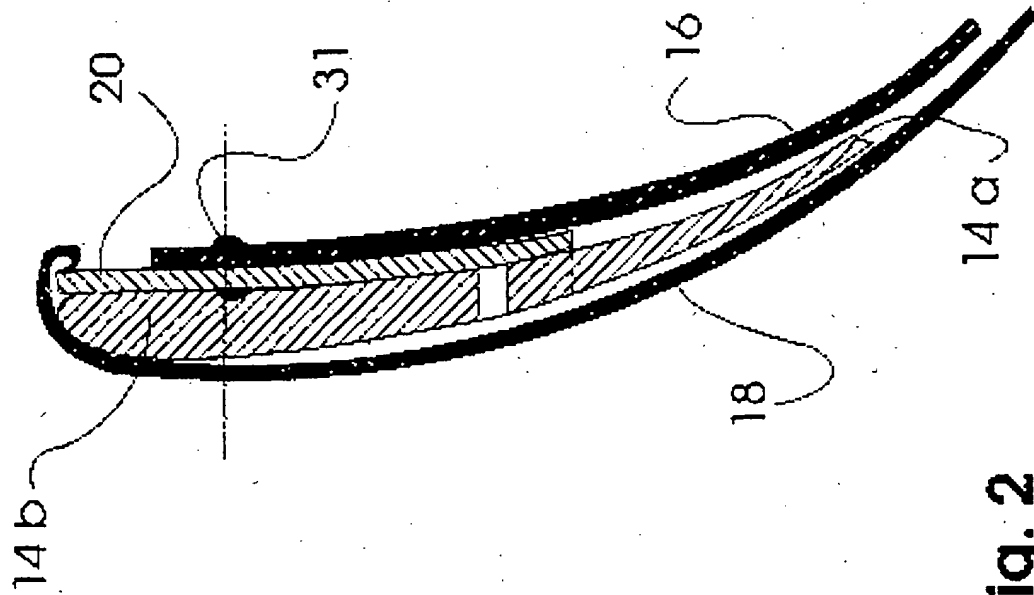


Fig. 2

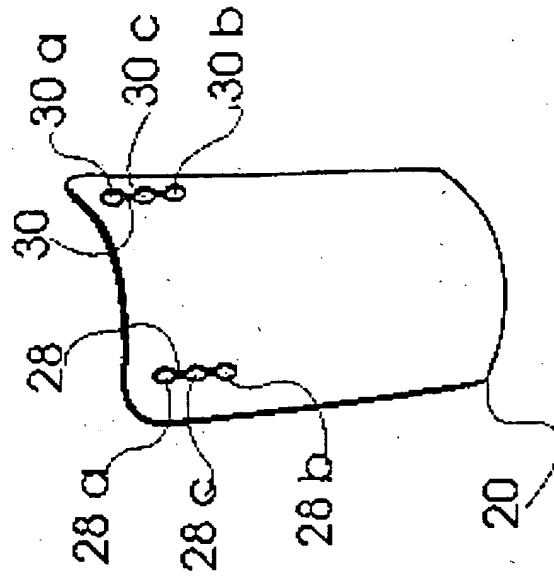


Fig. 3

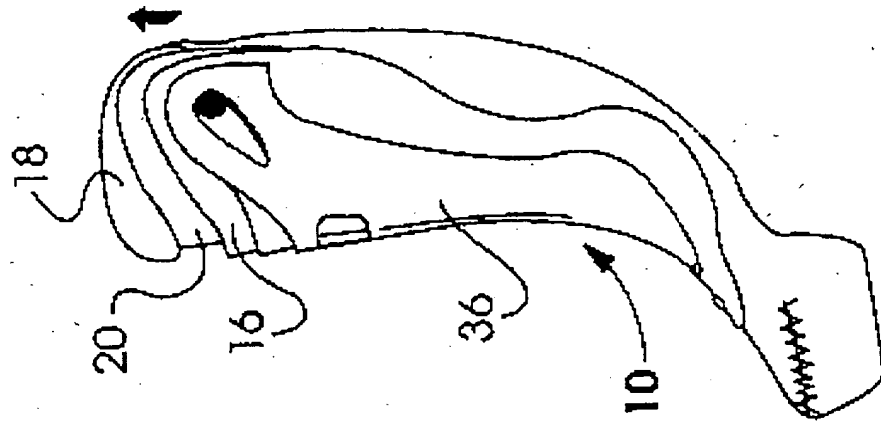


Fig. 6

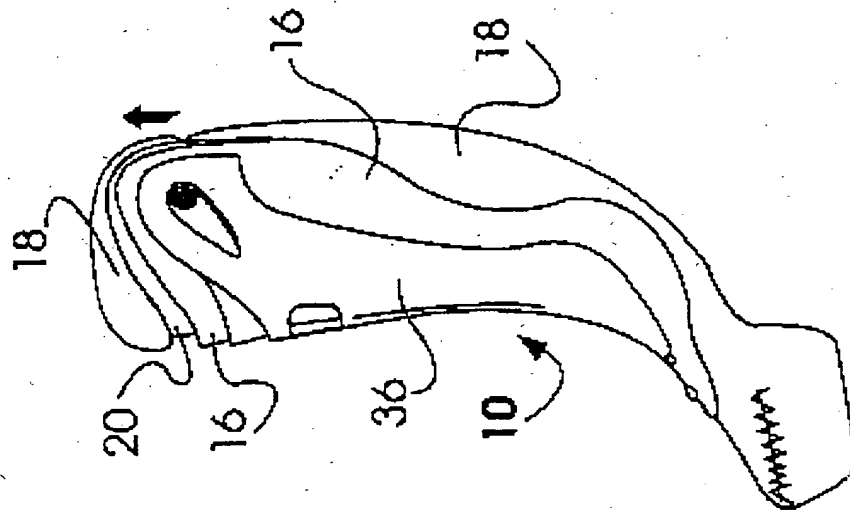


Fig. 5

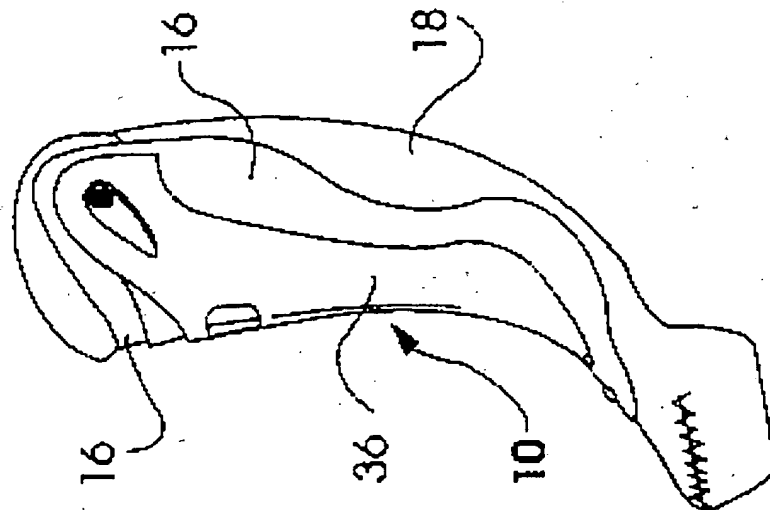


Fig. 4

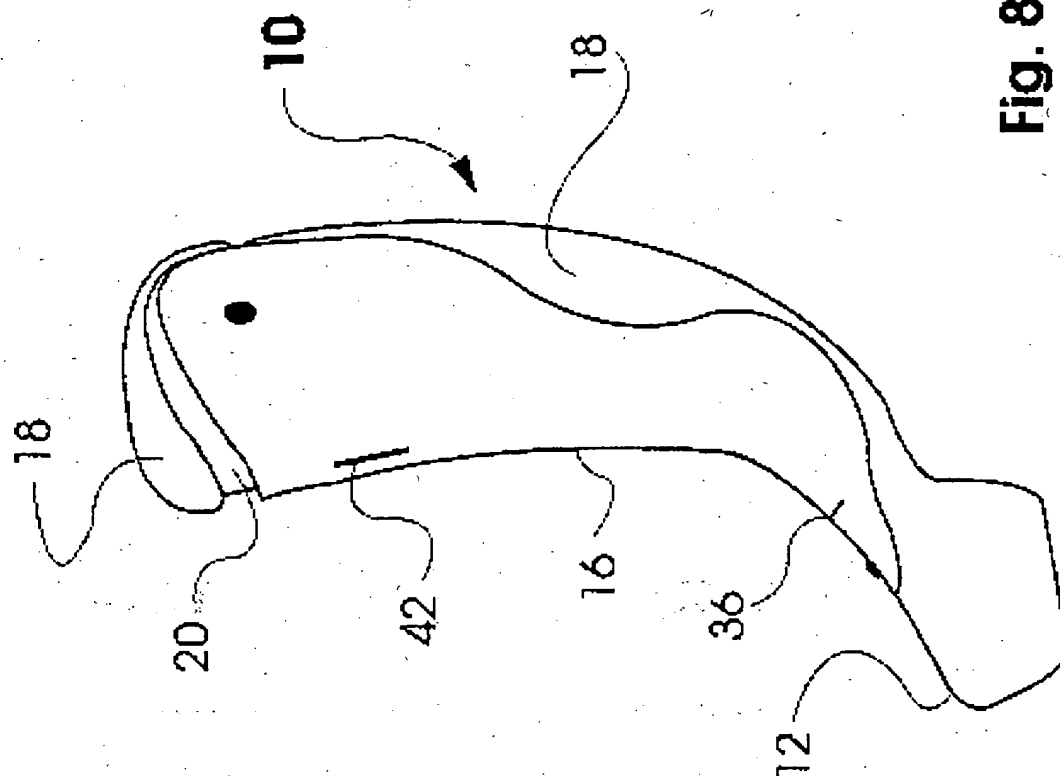


Fig. 8

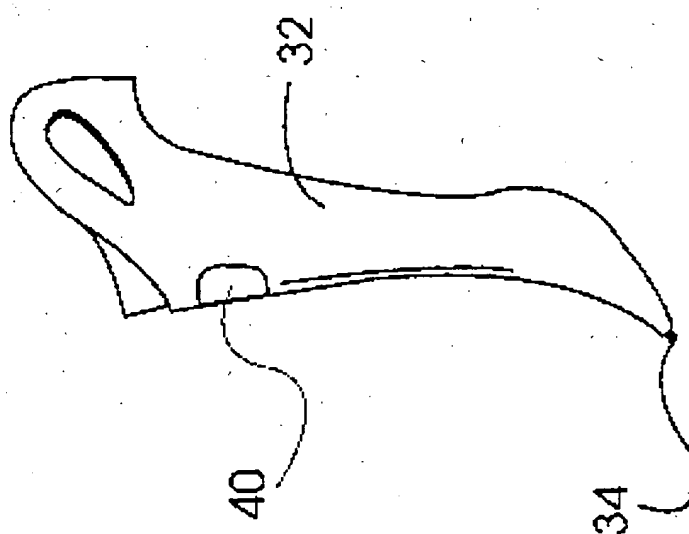
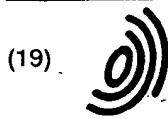


Fig. 7



(19)

Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 695 515 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
08.01.1997 Bulletin 1997/02

(51) Int. Cl.<sup>6</sup>: A43B 23/26, A43B 5/04

(43) Date of publication A2:  
07.02.1996 Bulletin 1996/06

(21) Application number: 95202029.5

(22) Date of filing: 22.07.1995

(84) Designated Contracting States:  
AT CH DE FR IT LI

(30) Priority: 04.08.1994 IT TV940048

(71) Applicant: TECNICA SpA  
I-31040 Giavera del Montello (Treviso) (IT)

(72) Inventors:

- Gabrielli, Andrea  
I-38037 Predazzo (Trento) (IT)
- Marega, Antonello  
31040 Volpago (Treviso) (IT)

(74) Representative: Michelotti, Giuliano et al  
c/o SAIC BREVETTI S.r.l.  
Via Paris Bordone, 9  
31100 Treviso (IT)

### (54) Tongue for internal shoes of ski-boots

(57) A padding (14), which is covered internally with a lining (18) and externally with a rigid layer (16), is provided in a tongue for the internal shoes of ski boots. The padding (14) is divided into a lower portion (14a) which is integral with the rigid layer (16) and an upper portion (14b) which is integral with a sliding insert (20) interposed between the upper portion itself and the rigid external layer (16). The position of the sliding insert (20) and thus of the upper padding (14b) varies between a lower limit position in which the sliding insert (20) is completely lowered and an upper limit position in which the sliding insert (16) is completely raised.

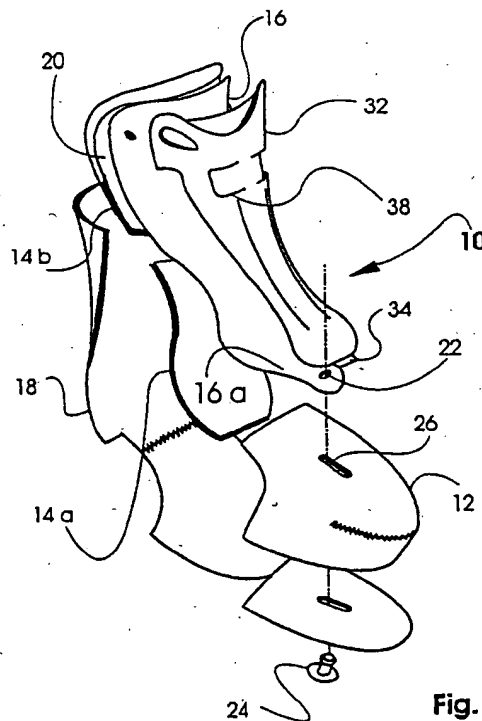


Fig. 1

EP 0 695 515 A3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 95 20 2029

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	DE-U-92 13 810 (TECNICA) 3 December 1992 * claim 1 *	1	A43B23/26 A43B5/04
A	WO-A-89 00015 (KASTINGER SKIBOOTS) 12 January 1989 * claim 4; figures 4,5 *	1	
P,A	EP-A-0 647 414 (NORDICA SPA) 12 April 1995 * claim 8 *	1	
A	DE-A-18 10 291 (GÖTZ, HANS) 4 June 1970 * page 2, paragraph 1 - page 3, paragraph 5; figure 2 *	1	
P,A, D	EP-A-0 657 114 (TECNICA S P A) 14 June 1995 * claim 1; figures 8-11 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A43B
Place of search THE HAGUE		Date of completion of the search 12 November 1996	Examiner De Gussem, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1501 (01.92) (P04C01)